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Worldwide Report

TELECOMMUNICATIONS POLICY,
RESEARCH AND DEVELOPMENT

No. 214



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CONSORTIUM URGES GOVERNMENT TO END TELECOM MONOPOLY

Need for Competition

Canberra THE WEEKEND AUSTRALIAN in English 27-28 Feb 82 p 3

[Article by David Hancock]

[Text] THE Federal Government should break Telecom's monopoly on telecommunications and throw the area open to private enterprise, a submission to the public inquiry into telecommunications services has urged.

Business Telecommunications Services, an organisation made up of 12 large Australian companies, says there is a need for competition in certain fields of telecommunications.

Private enterprise should be allowed to compete with Telecom in the more sophisticated areas to provide "enhanced" services, such as electronic mail, private and mobile networks, individual leased lines, and Telex and data services, it argues.

The submission advocates that Telecom retain basic services such as local telephone calls from fixed locations, national trunk calls, and the national telegram service.

It says Telecom should keep a monopoly on these fields, which it predicts will continue to make up the bulk of Australia's telecommunications requirements.

Business Telecommunications Services is essentially a lobby group funded by its members, companies which have high telecommunications needs and are prime customers of Telecom.

RESEARCH

More than \$1 million was spent researching the submission, based on a lengthy questionnaire circulated among the business community.

The submission envisages a new marketing structure for telecommunications.

Telecom would compete in the enhanced services market but with its activities subject to taxation.

Private enterprise should be allowed to sell telecommunications equipment direct to the consumer, fit it and maintain it without Telecom interference, it argues.

The submission sees the Overseas Telecommunications Commission (OTC) as a separate entity, with its international network available to private enterprise to lease facilities and interconnect their networks.

It says some form of regulation would be necessary to protect the interest of users, promote efficiency and to encourage competition.

The submission advocates transferring from Telecom all present regulatory functions and the restriction of providing telecommunications equipment and plant.

Telecom Trade-Off Offer

Canberra THE AUSTRALIAN in English 1 Mar 82 p 3

[Article by Ted Knez]

[Text] TELECOM has offered the Federal Government a bold plan to trade off some of its monopoly powers in return for greater control over borrowing and employment.

It proposes concessions to private enterprise to satisfy the Government's policy on greater business involvement in telecommunications.

In a submission to the public inquiry on telecommunications, Telecom insists on remaining a statutory body with modifications to accommodate more competition and provide flexible management.

In particular, Telecom calls for:

- Powers to enter joint or co-operative ventures with private or public enterprise bodies;
- Independence from Loan Council and Treasury controls to the extent recommended by the Campbell committee of inquiry into the financial system;
- The right to employ staff in competitive areas under the same conditions applying to private enterprise;
- Flexibility of management in relation to expenditure with a view to balancing maintenance savings against increases in capital investments;
- Opportunity to exploit new technology to develop new services and improve existing ones; and
- The chance to market profitable services to offset the

loss areas and compete equally with private enterprise.

Telecom proposes a range of measures designed to weaken some of its monopoly controls and widen the opportunity for private involvement in telecommunications.

But the plan is seen in some circles as a challenge to the Government over moves to weaken Telecom's monopoly.

Telecom recommends progressive opening of the terminal and terminal systems market to wider competition.

It also proposes relinquishing its monopoly control over authorising conditions for the supply and operation of equipment and services.

The responsibility Telecom has for supervising and arbitrating the process for certifying equipment would also be relinquished under its trade-off plan.

Telecom argues that it has played an active role in helping to develop a strong electronics industry, buying products worth \$506 million in 1980-81.

Other manufacturing and service industries have also benefited, with Telecom placing contracts and orders worth \$300 million a year for building and construction work, cars, printing and property.

Telecom's submission describes the plan as a "revised relationship" between it and the Federal Government.

It said there should be a national authority on telecommunications responsible to Federal Parliament.

It could make big economies of scale and focus, and stimulate and foster local research, development and manufacture in telecommunications.

The Federal Government axed Telecom's plans last year to pioneer a national video information system as part of its policy of encouraging private enterprise to initiate new telecommunications projects.

But in its submission, Telecom argues for the right to take a lead in the area of systems development while offering private enterprise a share in providing the technology.

CSO: 5500/7529

ANNUAL REPORT SHOWS TELECOM PROFITS AT RECORD HIGH

Perth THE WEST AUSTRALIAN in English 19 Feb 82 p 3

[Text]

CANBERRA: Telecom yesterday announced a record profit of \$232.5 million for the 1980-81 financial year—and strongly hinted that some price rises were likely.

Telecom's acting chairman, Mr T. E. May, said that the 13 per cent business growth was the best in five years, but the commission faced financial pressures which would affect charges.

The \$232 million profit—9.9 per cent—on earnings of \$260.9 million compares with BHP's latest profit of \$491 million on turnover of \$4580 million.

Telecom officials say that the profit must be seen in its right perspective and is ploughed back into Australia's telecommunications system.

Australia's biggest public corporation faces the threat of losing some of its most profitable areas to private enterprise after a public inquiry later this year that would force it to raise charges on its remaining operations.

The money Telecom can borrow from the public for future investment is limited by the Federal Government's economic policy. In the past financial year the commission

financed 73 per cent of its investment from internal funds including profit, depreciation allowances and superannuation funds.

Mr May said that the waiting time for the connection of some new services had increased because the amount of money available for investment was less than desirable.

Internal funding was higher than most overseas telecommunications operations and other Australian statutory corporations but the shortage of loan funds would force it to increase.

Factor

"This in turn will be a factor affecting the price of services to the public," Mr May said.

"At the same time, it will be necessary to undertake a rebalancing of charges to more appropriately reflect actual costs."

Mr May said that technology was reducing the cost of long-distance calls but not short-distance calls.

In its annual report tabled in Federal Parliament, Telecom also reported:

- That the volume of its business, measured in terms of constant price earnings, had risen by a record 13 per cent, last financial year.

- That it had borrowed \$204 million on the Australian market.

- Profits and borrowings had been ploughed back into a \$1164 million million development programme.

- The profit represented a return of only 2.9 per cent on net assets.

- Productivity had increased by seven per cent.

- Record traffic was carried.

- Interest payments of \$328 million had been made to the Government.

- Interest payments of \$84.5 million had been made to 50,000 stockholders.

AUSTRALIA

DOMESTIC SATELLITE PLANS

DK101316 Sydney THE AUSTRALIAN in English 15 Mar 82 p 18

[Excerpt] Details of contracts to supply the hardware and software for the domestic communications satellite are expected to be announced shortly by the federal government.

The contracts are estimated to be worth upwards of \$100 million in the long term.

The communications satellite--AUSSAT--is regarded as the most significant contract for the local electronics industry in years.

The federal government has indicated that there will be the highest degree possible of local participation in the program--ranging from manufacturing and support for the ground segment, through to space tracking and the provision of sophisticated electronic hardware for the space segment.

The first Australian satellite is scheduled to be launched in 1985. Basically, the system has been designed to improve the existing communications network, provide TV and radio services to the outback, increase the capacity for bulk high speed business communications, enable improved health care and communication to remote locations and improve meteorological and scientific data transfer facilities.

The satellite will be positioned 36,000 km, above the Pacific Ocean near Nauru, enabling it to act as a communication relay station between two or more points of its coverage area of Australia and Papua New Guinea.

Each solar-powered satellite will have 15 transponders which receive a weak signal from earth and retransmit the amplified signal back to earth in another frequency.

The transponders will be able to handle one television program and up to three radio programs each. They also have the capacity to handle up to 1,000 voice channels or 50 million "bits" of information a second.

Initially the system will provide a national beam covering the whole country and an additional four, more powerful, spot beams. Three will cover Western

Australia, South Australia, the northern territory and Queensland. The fourth will cover NSW, Victoria and Tasmania.

A fifth 'spot' beam will serve Papua New Guinea.

Telecom will use the satellite to improve ISD and STD [subscriber trunk dialing] services to areas not currently serviced by its ground microwave system. The system will also be used to provide extra trunk capacity and for emergency services.

But the service likely to have the most impact, particularly in the outback areas, will be HACPSS--the Homestead and Community Broadcasting Satellite Service.

Initially the service will provide one ABC [Australian Broadcasting Commission] TV channel and up to three ABC radio channels. It will also have the capacity to provide a second commercial channel and radio service. Programs will be transmitted to the satellite from major earth stations in all capital cities except Melbourne.

CSO: 5500/5763

BRIEFS

GOVERNMENT COMPUTER AID--The Fraser Government will help Australian computer companies penetrate the domestic market, but accepts that companies will still buy most hardware and software from overseas multinationals. This is the opinion of Mr Jim Ramsey, Victoria's Minister for Economic Development. Speaking at the opening of the new Australian headquarters of the US computer company Control Data, in Melbourne, Mr Ramsey said: "It is unrealistic to expect Australia to develop overnight a comprehensive, broad-based digital technology industry along the lines of the US and Japan. But I believe our domestic companies have the potential to do well in particular segments of the market, and the Government intends assisting them in doing so." His comments follow the report published by the Victorian Computer Industry Advisory Group which called for more Government aid to boost the country's fledgling domestic computer base. From its new headquarters in St Kilda Road, Melbourne, Control Data, which sells some \$55 million worth of products and services in Australia yearly, wants to double its share of the market by 1984. The managing director of Control Data Australia Mr John De Beer said: "The Melbourne move, which has cost Control Data \$5.5 million, underlines the company's commitment to the Australian marketplace." Control data also has a business products manufacturing plant in Moorabbin, Victoria, and a manufacturing division in Knox. The company's data services network, marketed under the Cybernet and Call/370 tags, is now online nationally via the Telecom network. [By Claire O'Grady] [Text] [Canberra THE AUSTRALIAN in English 23 Feb 82 p 27]

CWO: 5500/7528

SPACE DEPARTMENT REPORTS SATELLITE DEVELOPMENT

New Delhi PATRIOT in English 28 Mar 82 p 5

[Text]

India is engaged in developing a major new launch vehicle — PSLV (Polar Satellite Launch Vehicle), capable of putting 1000 kg satellites in polar sun-synchronous orbit, reports UNI.

This is primarily designed for IRS (Indian Remote Sensing) satellite as its payload, according to the annual report for 1981-82 of the Department of Space just released in the Capital.

This is part of the programme for the decade which will see the development of an IRS satellite series for the effective utilisation of remote sensing technology and to promote the establishment of a national natural resources survey and management system.

The report says that the development of indigenous launch capability to orbit semi-operational and operation applications spacecraft is an integral part of the Indian space programme.

With the expertise gained through the SLV-3 project, VSSC (Vikram Sarabhai Space Centre) is now developing more powerful and advanced launch vehicles such as the augmented satellite launch vehicle (ASLV) and the PSLV with capabilities to launch 150 kg spacecraft in low earth orbit and 1000 kg spacecraft in polar sun-synchronous orbit respectively.

Configuration of the PSLV vehicle capable of launching a 1000 kg remote sensing satellite into a polar sun-synchronous orbit of 1000 km altitude has been finalised after detailed studies of various options, according to the report. This would be a major project of ISRO (Indian Space

Research Organisation). The specs have been laid down and detailed specifications of various sub-systems and designs are in progress.

The programme and project elements and requirements of various resources have been worked out and the project is expected to be approved shortly.

The PSLV programme will be the main task of VSSC and SHAR for the next over five years.

The report says the APPLE (Ariane passenger payload experiment) has conclusively proved India's technological capability in building a three-axis stabilised geo-stationary communication sa-

telite. Hitherto, the USA, the USSR, some European countries, Canada and Japan had demonstrated such a capability.

The success of APPLE is an important milestone in India's satellite technology capability and plans to build sophisticated three-axis stabilised, state-of-art spacecraft and to carry out complicated manoeuvres in space.

APPLE has the capability to provide the equivalent of one colour TV or 600 voice communication channels.

INDIA'S SATELLITE INSAT LAUNCHED

New Delhi INDIA TODAY in English 15 Mar 82 p 26

[Article by Amarnath K. Menon]

[Text]

ON the other side of the globe, a two-stage launcher is poised on a pad at the Kennedy Space Centre, Florida, for the instruction that will blast a compact package of electronics into orbit. Called the Indian National Satellite (INSAT), it will take the 900-kg satellite six weeks after launch on April 8 to hover 35,784 km over India in a geostationary orbit. India will then become the sixth country to own a communications satellite — after the United States, the Soviet Union, Canada, Indonesia and Japan.

Designed as the lynchpin of communications in the country, INSAT will service television broadcasts, national telecommunications and meteorological information. This is the country's costliest space venture with about Rs 130 crore being spent on the space segment and an equal amount on the ground-based facilities being completed by user agencies like the Posts and Telegraphs Department, the Indian Meteorological Department (IMD) and Doordarshan.

Inadequate Expertise: Indian scientists and technicians have already had some experience with communications satellites (COMSAT) such as the American Applications Technology Satellite-6 (ATS-6) during the Satellite Instructional Television Experiment (SITE), the Franco-German Symphonie satellite during the Satellite Telecommunication Experiment (STE) in the 70s and now the entirely indigenous experimental telecommunications satellite APPLE (for Ariane Passenger Payload Experiment). But the technology for building a COMSAT is still to be fully developed and the Department of Space turned to Ford Aerospace and Communications Corporation in July 1978.

Ford Aerospace is to supply two geostationary satellites — the second is INSAT 1B and

will be launched before October next year — and allied services, including equipment for the master control facility at Hassan in Karnataka. From here engineers will use two fully steerable 14-metre antennae to manage the spheres in the sky. The satellites themselves, based largely on the INTELSAT (V) satellites built by the same company, are box-like structures energised by an 11.5 sq m solar array in the transfer orbit and by a solar sail in the geo-synchronous orbit. Once in its assigned slot of 74 degrees east, INSAT will move at a speed synchronous with earth's. The length from one tip of the solar sail to the extreme end of the solar array is about 19.4 m. The body is about 2.18 m by 1.55 m by 1.42 m.

The best slot for INSAT would have been 79 degrees east, but because of the rush for parking space up in the heavens, the satellite had to be content with its present slot. Says a scientist at the Indian Space Research Organisation (ISRO), Bangalore: "All that matters is squatter's rights in what is fast becoming an orbiting slum." India's arc of interest had 14 satellites in 1970; some 60 occupy the same space now.

Benefits: INSAT provides for 8,000 two-way long distance telephone circuits, potentially accessible from any part of the country. The links will be through four main stations at Bombay, Calcutta, Delhi and Madras and other stations in various parts of the country. Three mobile stations, including two that can be airlifted, are also being built for use in an emergency when existing communication links are disrupted.

Nation-wide live radio and TV coverage from action spots — like the dance festival at Khajuraho or the Carnatic music concert at Tiruvayur — are also possible with these mobile TV stations. But for all this to be a

reality, land-based cables, telephones, telex machines and other equipment must work and be always in order. To ensure this, a lot of down-to-earth work remains to be done. The Communications Ministry which is aware that only 10 per cent of the total telephone network serves the rural areas, is strengthening it. Meanwhile the Oil and Natural Gas Commission (ONGC) is exploring the possibility of linking its offshore complexes and land-based centres via INSAT.

For a country with a long coastline and large land mass, which badly needs improved weather forecasting and disaster warning, INSAT will provide cloud pictures every 30 minutes instead of four pictures a day from foreign satellites that the IMD gets now. The very high resolution radiometer on board the satellite will bring round-the-clock, half-hourly observations from 110 data collection platforms. Meteorological data recorded on these platforms are to be sent via INSAT to the central processing facility at the Meteorological Data Utilisation Centre (MDUC) in Delhi.

Forecasts: The centre has the capability of observing cyclonic storms over a specific region as frequently as every five minutes when in need, says a meteorologist. Forecasts about the development of storms, their intensity and direction of movement can then be beamed back via INSAT to 100 disaster warning centres being set up in the coastal districts.

Perhaps the greatest possible gain from INSAT is the use of its two TV channels transponders in technological terms – for nation-wide television, both for

entertainment and education. Although Doordarshan has plans to reach 15,300 villages in 18 districts spread over six states, the direct TV broadcast by INSAT will be able to reach only Kurnool (Andhra Pradesh), Ranchi (Bihar) and Sambalpur (Orissa) districts when the programmes are formally inaugurated on August 15. Doordarshan sources argue that programmes are not yet ready, because the Union Cabinet sanction for using INSAT for special rural TV audiences came only in July last year.

The lackadaisical attitude is starkly evident, considering that most of the country can be covered by the primary area of INSAT's direct TV broadcast range. But no plan has been evolved for installing the direct reception sets, at least in clusters, in several states. Therefore in the initial months only villages in the three select districts and the TV sets within range of the 18 stations in the country will receive programmes via INSAT.

INSAT television coverage plans include 45 minutes of teleschool in the mornings and hour-long rural-oriented programmes in the evenings, followed by a common nationwide telecast beginning at 9 p.m. after 30 minutes of news in English and Hindi. This channel will beam programmes of nationwide interest for about an hour. A space venture like the INSAT is justifiable only by practical pay-offs, providing facts and figures for the balance sheet which can stand up to a cost-benefit analysis. But as one ISRO scientist remarked wryly: "The Americans dropped the broadest hint by naming their first COMSAT Early Bird. We have still to learn, let alone our trying to catch up with the others."

CSO: 5500/5762

ISRO REPORTED BEGINNING WORK ON INSAT-1B

Bombay THE TIMES OF INDIA in English 29 Mar 82 pp 1, 9

[Text]

BANGALORE, March 28 (PTI)

EVEN as the launch preparations for the Indian National Satellite-1A (INSAT)—India's weather eye in space—are in progress at its launch site at Cape Canaveral, U.S.A., scientists at the Indian Space Research Centre (ISRO) here have taken up the foundation work for the fabrication of INSAT-1B.

Insat-1A, India's first domestic satellite, weighing 1150 kg, will be launched as scheduled from U.S.A. on April 8 by a Thor-Delta-3910 vehicle, ISRO source told PTI.

The spacecraft, which is undergoing ground system-level qualification tests, will be placed in geostationary orbit 35,784 km. above India. It is expected to improve telecommunications, meteorological and mass communication capabilities.

The hotline between the satellite control centre (SCC) at Hassan, 158 km. from here and Cape Canaveral via Bangalore-Bombay and Washington is working well, according to ISRO.

The satellite control centre with its fully steerable 14-mt. diameter antennae and a standby power system, including a no-break power component, is all set to control the INSAT.

Indian scientists headed by Prof. L. R. Rao, director of the ISRO satellite centre, and Mr. P. P. Kale, project director, INSAT-1A, are already in Cape Canaveral working with the scientists of the Ford Aerospace and Communications Corporation which built the satellite.

ISRO said the spacecraft, to be positioned over 74 degree east longitude, would be utilised by Doordarshan for direct television broadcasting to selected rural clusters in various states. All India Radio was expected to use five radio programme distribution channels available in INSAT.

According to ISRO, the INSAT-1B, currently selected for launch by a space shuttle in 1983, will be an active in-orbit spare positioned over 94 degree east longitude. It will be used for trunk telecommunication links. The components for INSAT-1B

are in various stages of fabrication.

The INSAT-1A spacecraft configuration is characterised by a large rectangular body with two antennae for telecommunications and TV broadcasting on the east and west sides of the satellite which are deployed in orbit. Towards the south side of the satellite, there is one large silicon cell solar array which is deployed in space and tracks the sun for generation of the required electrical power of about 900 watts. On the north side of the body, the satellite carries a solar sail which is deployed in orbit to balance the solar pressure torques.

The earth facing side of the satellite carries UHF antennae, VHRF instruments and earth sensors. The space viewing side of the satellite carries a magnetic torques coil for fine correction of the attitude of the satellite. The satellite is three-axis stabilised using momentum wheels.

The satellite has also a telemetry system which provides data to the ground system about the functioning of the satellite systems during its expected life span of seven years.

POLICY ON GEOSTATIONARY SATELLITE DEBRIS TOLD

New Delhi PATRIOT in English 1 Apr 82 p 4

[Text]

BANGALORE, March 31 (PTI) INDIA is for the removal of all geo-stationary satellites after completion of their tasks to make space debris-free.

The "spent" geostationary satellites can be taken away from their parking slots by burning thrusters leaving a certain amount of fuel in the satellites after the fulfilment of their mission. India is for making the removal of "spent" satellites from parking slots mandatory.

According to a spokesman of the ISRO, there is no "physical" crowding of satellites at the Geostationary Orbit (GSO). The crowding was for the use of certain popular frequencies like 6 and 4 GHz, he said.

The geostationary slot is now being allotted on a first-come-first-served basis. A few countries, particularly the developed, which have the necessary means to pre-orbit take "inordinate and inequitable" advantage of this system?

Because of this, some developing countries, which may have an identifiable need in the future for specific positions in the geostationary orbit may be forced to seek launch and other services from the space-have or face forfeiture of their GSO slots.

India is, therefore, seeking revision of the present allocation methodology, making the present and future needs of a country an essential criterion in a new dispensation, rather than the present method which

only accounts for a country's ability to occupy a slot in the GSO.

The real problem in the parking slot is expected to arise when the huge solar powered satellites are put into orbit. This problem, however, is being looked into by international bodies. In Jagdishpur block of Bhagalpur district.

Krityanand Jha was murdered on 23 May, 1979 by some anti-social elements while he was coming out of panchayat bhawan after performing his duties. His panchayat was recognised as the second best panchayat in India.

CSO: 5500/7111

MINISTER TELLS LOK SABHA SATELLITE PLANS

Bombay THE TIMES OF INDIA in English 1 Apr 82 p 19

[Text]

THE Indian remote sensing satellite is planned to be launched in 1985-86, the minister of state for science and technology, Mr. C. P. N. Singh, told the Lok Sabha during question hour today.

He told Dr. Drupasindhu Bhoi the national remote sensing technology has provided a quick and accurate method of surveying and monitoring natural resources. Remote sensing data could be acquired in a short time and at periodical intervals covering large areas.

Almost all the states had taken advantage of this new technology for various applications, he said.

The minister said the national remote sensing agency (NRSA) at Hyderabad undertook remote sensing of areas for various states particularly for land use, water management, information on snow melt, forestry, geology and fisheries development.

During the last drought, Uttar Pradesh utilised the facilities for indicating areas where wells could be dug. The states which made use of these facilities included Andhra Pradesh, Karnataka, Tamil Nadu, Tripura, Mizoram, Arunachal Pradesh, Har-

yana, Punjab, Rajasthan, Nagaland and Assam.

The agency also undertook aerial surveys when requested by the state governments or other agencies on cost reimbursable basis. Aerial surveys had been made in Andhra Pradesh and the Brahmaputra river and aerial photography for the Survey of India.

Replying to another question, Mr. Singh said the NRSA had "tremendous facilities...and we are manufacturing sophisticated equipment as well."

The minister said the agency acquired data from the U.S. Landsat satellites for distribution to various agencies. It was getting ready to receive data from Indian remote sensing satellites.

He told Mr. Satyasadan Chakraborty who asked a question about the forthcoming launching of INSAT-1 from Cape Canaveral (U.S.), that India had taken the help of facilities in the U.S. as well as the Soviet Union.

In reply to Mr. P. Namgyal, member from Ladakh, the minister said the department would look into the question of surveying the natural resources of Jammu and Kashmir.

CSO: 5500/7112

TELEVISION CASTS TO RURAL STATES BEGIN IN AUGUST

Madras THE HINDU in English 1 Apr 82 p 7

[Text]

NEW DELHI, March 31

Extension of television to rural areas, utilising the Indian National Satellite (INSAT), is expected only in August and that too in two States — Andhra Pradesh and Orissa — though the satellite will be launched next week and the scheme envisages coverage of six States.

According to official sources, owing to resource constraints and the short time available, the facilities for production of programmes will be augmented only at the two production centres — Hyderabad and Cuttack.

The other four States — Bihar, Gujarat, Maharashtra and Uttar Pradesh — are expected to be covered only after two years, by which time production centres at Ranchi, Rajkot, Nagpur and Gorakhpur will be completed.

Approval delayed: If the Information and Broadcasting Ministry is not ready to utilise INSAT immediately after its launching, it is because of the delay in Government approval for the scheme. The schemes for utilisation of INSAT in respect of telecommunications and meteorology were cleared first and utilisation in respect of television broadcasting was cleared much later.

Plans have been drawn up to utilise the two television transponders provided in the INSAT space segment. It envisages dissemination of education to rural communities in far-flung and backward areas. Besides establishment of centres to produce programmes in different languages, re-broadcast facilities and

deployment of community TV receivers are proposed. When the scheme gets into full swing, 15,000 villages in the six States will be covered.

Television link-up: INSAT will also be utilised to link all TV centres in the country. For this, uplinking facilities will be provided at the Delhi and Shillong earth stations and a transportable earth station with TV capability will be made available. Satellite relay receivers will be installed at all transmitting centres for receiving and relaying the common programmes of national importance as well as sports and news events.

A separate scheme has been prepared for providing television facilities through INSAT in the north-eastern region. The scheme which is yet to be approved envisages the setting up of 10 kW TV transmitters at Dibrugarh, Tura, Agartala and Silchar, one kW transmitters at Kohima, Shillong, Imphal, Aizawl and Itanagar, and 100 watts TV transmitters at Passighat, Tezu and Tawang.

Twin objectives: The approved scheme for INSAT television service provides for only 45 minutes of educational programme in the morning and one-hour rural programme in the evening. The evening transmission may be increased later, with the addition of national programme including news bulletins, to be relayed by all the TV centres through the satellite.

This, it is felt, will fulfil the twin objective of utilising INSAT-I as an aid to rural development and promotion of national integration.

CSO: 5500/7114

CORRESPONDENT PREVIEWS PRESS COMMISSION REPORT

Calcutta THE SUNDAY STATESMAN in English 28 Mar 82 p 7

[Text] New Delhi, March 27.--The Press Commission, which is expected to submit its report to the Government on Tuesday, has categorically supported the view that two competing English language news agencies are necessary in a large and heterogeneous country like India.

The commission has come to the unanimous conclusion that the present position, in which the Press Trust of India and United News of India offer competing services, be left undisturbed.

The first Press Commission, which submitted its report in 1954, had also spoken of the need to have at least two news agencies, each competing with and acting as a corrective to the other.

Referring to Indian language news agencies, the commission says the unanimous opinion was that the services now provided by the two Indian language agencies are inadequate, both quantitatively and qualitatively. The need to develop a first-rate news service in Indian languages without delay has been stressed by the commission. It has gone to the extent of suggesting that one of the two English language news agencies should undertake the responsibility of providing an efficient news service in Indian languages.

If the English news agencies are not forthcoming, says the commission the Government should even consider the setting up of a statutory corporation for the purpose.

The commission is understood to be in sympathy with the complaints of the news agencies that All India Radio has traditionally been giving them a raw deal and has observed: "Any formula that is worked out should take into account the fact that the broadcast media have a large stake, even as newspapers do, in the development of the news agencies, so that they can cover more adequately the events and the social and economic processes in the world's largest democracy. The approach should not be one of driving a hard bargain and arriving at the minimum prices payable for services presently rendered by the agencies".

In the event of a dispute between news agencies on the one hand and AIR and Doordarshan on the other, the commission has recommended that the dispute be referred to the MRTTP commission. This is because the news agencies are in the position of

monopolistic suppliers of a service, and, likewise, All India Radio and Doordarshan are monopolistic buyers of the service.

The commission has recorded the little known fact that a committee of officials of the Ministry of Information itself went into the question of AIR's subscription to news agencies in 1978, and came to the conclusion that AIR's payment to news agencies was very low. It has suggested a new formula in accordance with which payment is at present being made.

In this connection, the commission has expressed the opinion that news bulletins broadcast by the AIR are a prime draw. It has referred to a recent survey by the audience research unit of AIR on listenership to AIR's central and regional news bulletins. According to this survey, the majority of the listeners, both in the rural and urban area, turned to the radio for news. The figure ranged between 77.8% and 93% in different urban areas, while in rural areas the corresponding figure of news listenership was between 71% and 93%.

The commission has observed that news ranks very high along with the film music in AIR's listener rating. "A rational and equitable basis for working out AIR's payment to the news agencies is, therefore, essential".

CSO: 5500/7104

FRENCH OFFER DIGITAL TELEPHONE SWITCHING TECHNOLOGY

Bombay THE TIMES OF INDIA in English 31 Mar 82 p 9

[Text] **T**HE Union cabinet is shortly expected to formally approve a very attractive French offer to provide the latest digital telephone switching technology.

The state-owned French company CIT-Alcatel has offered its most up-to-date E10 digital switching system for manufacture in a 500,000-line factory, the location of which has yet to be decided. In addition, Alcatel has offered technology for the Palsat unit of ITI that will manufacture digital trunk automatic exchanges.

The offer is worth about Rs. 176 crores, 30 per cent of which will be

provided by the French government as an outright grant. Of the remainder, half will be soft loans and half hard loans, arranged and managed by French banks.

For the first time, P and T officials have been unanimous in their recommendation of a telecommunications system. Informed sources point out that this is because there can be no two opinions of both being peers — Alcatel as a company and on the E10 series as a system.

A PIONEER

Alcatel is a pioneer in digital technology and has more than a decade of operating experience in this area, a record unmatched by anyone else. About two million lines of Alcatel's L10A are already in use all over the world. The E10B, a more powerful version, has recently been installed in North Yemen and Sri Lanka and there are about 300,000 lines of this system in operation internationally.

Telecommunications Consultants (India) Ltd. (TCIL), a public sector consultancy company, is helping the Yemen government in the operation of the E10B system there. A report prepared by TCIL on its experience is believed to have strongly influenced P and T officials involved in evaluating the Alcatel offer.

Some eyebrows may be raised if the cabinet finally agrees to the deal (it must, formally, sources indicate), for a third tender has already been floated, coming from manufacturers of digital switching systems. Alcatel has not responded to this tender. Nippon Electric (NEC) of Japan, Ericsson of Sweden and ITI have quoted for the two new 500,000-line factories being contemplated.

Alcatel obviously has made full use of Mr. Gandhi's trip to Paris to promote the tender process. P and T officials are actually relieved at this happening. They point out

that tender evaluation can take anywhere up to two years. It is an extremely slow process where every government department tries to assert its authority and only succeeds in delaying a final decision.

Alcatel's manoeuvring at the highest political levels has expedited a decision, at least for one of the two new factories and saved a minimum of two to three years of endless inter-ministerial wrangling.

Moreover, P and T officials have come to dread tender evaluation for they have become a messy business.

P and T officers would prefer not to involve themselves in highly sensitive tender evaluation, specially when there are so many entrenched lobbies for one or the other foreign company.

The example that is often quoted is that of Mr. S.M. Agarkar, a man held in high esteem in the P and T technocracy, who was arrested by the Janata government on the grounds that he had fiddled around with contracts and tenders when he was secretary of communications during 1975-77. Engineers feel happy that

the procedure adopted in the Alcatel case leaves very little room for future victimisation and harassment.

However happy P and T officials may be with Alcatel on both political and techno-economic grounds, the electronics commission must be feeling a bit peeved. The commission has been hoping, and unrealistically so it might be added, to acquire sophisticated integrated circuit (IC) technology from the manufacturer of the switching system selected via the tender. IC technology is at an entirely different level from the switching system technology and is more closely guarded.

Alcatel's offer is cheaper than that of other companies. Its price tag for the 500,000-line factory is about the same that NEC, ITT and Thomson-CSF have quoted for the 150,000-line Patghat factory. On a landed cost basis, an Alcatel line costs about Rs. 100 less than an NEC line.

TECHNICAL GROUNDS

However, it is not the price advantage that is overriding. On technical grounds, F10B is unsurpassed. One can easily have an exchange of up to 4,500 subscribers with this system, a capability yet to be demonstrated by its competitors.

F10's capacity for busy hour call attempts (BHCA) is around 190,000. This means that for an exchange of 10,000 subscribers that is the norm in India, 19 call attempts per subscriber in the peak hours is permitted.

The worst-case traffic scenario is in Greater Bombay where the peak hour calling rate is around 14 per subscriber. The F10, alone among the present systems that have any substantial number of lines in operation, can handle the peculiarities of Indian traffic conditions.

The British system X appears to be another such system that can allow for a large number of subscribers. P and T officials wonder whether British Telecom have taken a leaf out of Alcatel's book, and will be the suppliers of technology for the second factory.

CSO: 5500/7108

NEW TELEGRAM TRANSMISSION SYSTEMS INTRODUCED

Madras THE HINDU in English 31 Mar 82 p 6

[Text]

NEW DELHI March 30

Two new systems of transmission of telegrams being introduced in the telecommunications system will considerably eliminate telegraphic delays, the Communications Minister, Mr C M Stephen, announced in the Lok Sabha today.

In reply to a question by Mr Mool Chand Daga, he said the Gentex or general telex system had been started in Bombay and Delhi and was being introduced in Calcutta to provide straight transmission to destinations.

The other system being experimented in Madras, which had proved fairly successful was the "store and forward" system developed by an indigenous electronic company.

In the "store and forward" system, telegrams were received irrespective of availability of route in a particular direction, stored and "fired out" to reach the other end overcoming inhibitions or obstructions.

Mr Daga referred to telegrams booked at considerable cost being sent by post, especially in the rural areas.

Mr Stephen explained that there were 26,000 combined telegraph offices in the rural areas which work 4 during specified hours. Outside those hours there would be none to receive a telegram if transmitted to the office.

Why the delays: Only about 55 per cent of the telegrams originating in a particular circle terminated in the same area. Forty-five per cent went outside. Hence the delays. There was a provision in the telegraph rules warning the sender that if a route was not available telegrams could be sent by post.

At a review of the system in 1981, it was decided to take steps to speed up the delivery of telegrams. Messages sent through railroads had been considerably cut down. Of about two lakh communicating telegrams throughout the country, only 5.1 per cent were now sent by post.

Later, the Minister of State, Mr Yogendra Mahawar, explained that a number of messages were received from banks and Government officers at the end of the day when lines were disturbed — the staff were absent. Only in such cases were

telegrams sent by air. They reached faster than transmission by wires, he added.

Answering Mr Daga, he said there was no question of refund of money to the senders — PTI

CSO: 5500/7110

BRIEFS

RAJASTHAN SATELLITE CENTER--Jaipur, (INFA): The first satellite centre in Rajasthan has been set up in Chaupasan hills, six km. from Jodhpur city, by the Posts and Telegraphs department. This centre is the 22nd of its kind in the country. Set up at a cost of Rs. 1.50 crores, this centre will be linked-up with INSAT next month for telecommunication services. It is equipped with the most modern equipment imported from Japan. [Text] [Bombay THE TIMES OF INDIA in English 29 Mar 82 p 3]

TELEVISION RELAY STATION--New Delhi, March 30 (PTI): A TV relay station through microwave link is proposed to be established at Dhule, Mr. Vasant Sathe, information and broadcasting minister, said in the Lok Sabha today. The implementation of the proposal is subject to availability of resources, the minister told Mr. M. H. Gavit in a written reply. [Text] [Bombay THE TIMES OF INDIA in English 31 Mar 82 p 7]

ROHINI FLIGHT PLANS--New Delhi, March 26: The next flight of SLV-3 has been scheduled for September this year. Several payload proposals for future Rohini satellite series have been received from various research and development institutions and universities. The Rohini to be carried by the next flight will have an advanced landmark tracer payload. This camera uses solid state imaging sensors in two spectral bands and will be useful in carrying out experiments of relevance to remote sensing technology. In the subsequent missions, there will be a laser tracking experiment, doppler system, transient gamma ray study payload, possibly with a thermal coating experiment, a Langmuir probe or a solar radiation monitoring payload. The flight using indigenous inertial measurement unit conducted in May last year injected the Rohini satellite into a lower than expected orbit as a result of which the craft re-entered the atmosphere in nine days instead of 90 as was planned. [Text] [Bombay THE TIMES OF INDIA in English 27 Mar 82 p 9]

CSO: 5500/7103

TV SET DEMANDS, MANUFACTURING PROJECTS DISCUSSED

Islamabad THE MUSLIM in English 3 Apr 82 p 7

[Text]

THE Economic Co-ordination Committee of the Cabinet (ECC) is understood to have directed the Federal Ministry of Industries to submit a detailed study with regard to the prospects of and potential for further development of colour TV sets manufacturing industry in the country including related questions such as savings in foreign exchange through local manufacture, price of the end-product and availability of skilled labour etc. After the said summary is submitted, the Government would take some policy decision on applications for new sanctions and expansion of existing facilities at the existing TV sets assembly and manufacturing enterprises.

An official survey has estimated the present demand of black and white TV sets at around 135,000 sets, as against which the production was estimated at around 98,500 sets during 1980-81. Imports of black and white TV sets on personal baggage have been reported to be negligible due to little favourable difference in prices of imported TV sets. But the black and white TV sets are imported under tied list of the Import Policy from Russia and Hungary. The sanctioned capacity for the manufacture of black and white TV sets is of the order of 130,000 sets but actual production, as mentioned above, has been low during 1980-81.

The demand for colour TV sets has been estimated at around 40,000 sets while actual production in the country during 1980-81 was in the region of 14,000 sets. Thus, the gap in the supply of colour TV sets is met through imports on personal baggage. Following the inauguration of colour transmission from Peshawar station recently in addition to the existing colour transmission facilities at Islamabad, Lahore and

Karachi, is likely to add to the demand for colour TV sets. Thus, there appears to be a sizeable potential of colour TV sets manufacturing in the country.

There were estimated to be about 800,000 TV sets in Pakistan at the end of June, 1981. In view of the installation of boosters at several far-flung area, the span of TV coverage has considerably widened. As a result, the demand for TV sets is expected to grow at the rate of 15 per cent per annum in the next few years. The need to allow expansion in the capacity for TV sets manufacturing in respect of both black and white and colour sets for promoting competition among the various manufacturers in the realm of price and quality can hardly be overestimated.

At present the sanctioned units of TV sets manufacturing/assembly facilities are allowed to import 11 components at concessional rate of duty at 25 per cent. However, additionally almost all the components and parts including plastic and metal parts are allowed for imports under commercial licensing on payment of normal rates of import duties which range from 40 per cent to 120 per cent. The relatively high tariff rates provide a fair measure of protection to manufacturers of these parts and manufacture of Sanyo brand of colour and black and white TV sets. The Japanese firm, it is stated, would not charge any technical fee and will also permit the local sponsors to export locally-made Sanyo TV sets to neighboring countries, as and when feasible.

The total cost of the project is estimated at Rs. 2.820 million including the foreign exchange component of Rs. 0.50 million only, for purchase of plant and equipment from abroad. The

foreign exchange financing will be arranged as Non-repatriable Investment from one of the Pakistani sponsors residing in Hong Kong who will hold 20 per cent of the proposed share capital. There is no foreign exchange loan or supplier's credit involved in the project.

The recurring foreign exchange expenditure, involved in the annual imports of raw materials, components parts, is estimated at Rs. 16.50 million while the cost of locally-available raw materials is estimated at around Rs. 21.75 million per annum. The company's existing industrial premises already possess power connection and other utilities. As the annual foreign exchange cost exceeds the permissible limit of Rs. 5.00 million (upto which CIPC/PICIC and IDBP are authorised to accord accord sanction), the project is required to be proved by the F.C.C.

The sales revenue of the enterprise, after it is implemented, is estimated at Rs. 58.00 million out of which, value-added by manufacture is estimated at Rs. 12.00 million.

Earlier, the Sanyo of Japan had concluded a collaboration agreement with Messrs. Electronic Industries Ltd., Karachi a Dawood Group Enterprise who have been manufacturing Sanyo brand TV sets as they were holding a sizeable

quantity of stocks of parts and components of this brand. However, Messrs. Sanyo Electric Co. Ltd., Japan are stated to have terminated their agreement recently with the former partners M/s Electronic Industries Ltd., Karachi, and have agreed to enter into collaboration with M/s World-wide Electronics Ltd., Karachi for local components in the country.

In addition to applications from the existing units for government permission to expand their production facilities, new applicants have also been showing interest for investment in this field. One such new applicant is the firm known as World-wide Electronics Ltd., Karachi. They are already engaged in the assembly-cum-manufacture of airconditioners and refrigerators at their existing premises at Korangi Industrial Estate, Karachi. They are producing these items in technical collaboration with Sanyo of Japan. Now, the firm has chalked out a project for the assembly-cum-manufacture of Sanyo brand TV sets with a plant capacity to manufacture 5,000 sets each of colour and black and white. Messrs. Sanyo Electric Company of Japan are stated to have agreed to provide full range of technical assistance including technical data, circuit diagrams etc. to the local sponsors.

SPACE AGENCY PROPOSAL PICKS UP INTEREST

Karachi BUSINESS RECORDER in English 7 Apr 82 p 3

[Text]

Pakistan's proposal for an early establishment of international space agency to not only curb growing militarization of space but also to reserve outer space purely for peaceful purposes for the benefit of developing states, has now picked up considerable interest in the world community.

The proposal has already been reflected in the draft report of the Unispace 82 conference to be held in Vienna in August this year which for the time being recommends alleviating the present UN outer space division to UN centre for outer space.

The UN centre would discharge some of the roles proposed by Pakistan for the international space agency. Though not as comprehensive, but it would be a step in the right direction.

This was stated in Karachi yesterday by Salim Mehmud, Chairman, Pakistan Space and Upper Atmosphere Research Commission (SUPARCO), in an interview on his return from New York where he represented Pakistan at the 25th session of the UN committee on the peaceful uses of outer space.

He said Pakistan delegation was the first to open to general debate of the committee session and stressed the strong need for establishment of an international space agency.

He said some of the functions of the agency would be to act as information clearing house and coordinating body in respect of all aspects of present and future space technology applications covering existing UN agencies dealing with space matters and the ones which may be created in future.

It would initiate a strong pro-

gramme aimed at financial aid, technical training and technology transfer from the developed countries to the developing countries in order to promote the peaceful uses and applications of space.

It would set up a machinery and necessary technical arm for monitoring of space activities of nations with a view to ensure that such activities are for peaceful purposes alone and that the developments in space technology are not used for military applications.

It would make available services of a satellite based on monitoring unit particularly for ensuring that security/disarmament agreements are adhered to and make available such services to the member states to meet their legitimate needs with a view to removing mutual fears and apprehensions.

He said Pakistan was also appointed as coordinator of a special group of the committee set up to resolve disagreements on the phraseology of certain aspects of the draft report for the forthcoming 'Unispace 825 international conference'.

The disagreements related to certain paragraphs of the draft report concerning 'remote sensing', i.e. the taking of pictures of other countries through orbiting satellites, and their subsequent disposal.

The disagreements on the wording of the draft report (to be taken up for consideration and possible final adoption by the forthcoming 'Unispace 82' moot) were resolved within a couple of days, and the Pakistani delegation played a major part in this matter.—

PAKISTAN

BRIEFS

TELECOMMUNICATION LOAN FOR PAKISTAN--WASHINGTON, April 6--The World Bank said yesterday it will lend Pakistan 40 million dollars for a telecommunications project. It said the Asian Development Bank, Japan, and West Germany would also support the project. The 287 million dollar project will improve and expand network services by installing local network facilities, toll-ticketing equipment and a new microwave system. It will also increase circuits for subsidiary routes and extend telex and telegraph facilities. Other provisions include additional microwave system channels, an earth station, a new international gateway exchange, cable installation and replacement, and consultant services. The bank loan is for 20 years, including five years of grace. It will pay an annual interest rate of 11.6 per cent. Other project supporters will provide cash generation, the bank said. [Text] [Karachi BUSINESS RECORDER in English 7 Apr 82 p 6]

MICROWAVE SYSTEM FOR BALUCHISTAN--QUETTA, April 4--The Federal Government has sanctioned an integrated microwave system for Baluchistan to provide better communication facilities. The system will extend from Karachi to Quetta via Khuzdar. With the installation of this system facility for a TV booster at Khuzdar would be possible. This was stated by the provincial Governor, Lt-Gen. Rahimuddin Khan, while addressing a representative gathering of Councilors, Ulema, tribal notables and general public at Khuzdar on Sunday morning. [Excerpt] [Karachi DAWN in English 5 Apr 82 p 1]

CSO: 5500/5760

VIETNAM

BRIEFS

HA NAM NINH BROADCASTING STATION--Ha Nam Ninh Province, whose population is nearly three million, has constructed a new broadcasting station with a power output of five kilowatts and has two antennas 110 and 115 meters high. The station, which has been completed, has successfully transmitted signals.
[Text] [Hanoi QUAN DOI NHAN DAN in Vietnamese 22 Mar 82 p 2]

CSO: 5500/5765

CSSR'S DIGITAL COMMUNICATIONS PROGRESS WITHIN CEMA PROGRAM REPORTED

Prague TELEKOMUNICACE in Czech No 2, 1982, pp 27-29

[Article by Eng Jaroslav Trnka, Federal Communications Ministry: "The Introduction of Digital Communication Systems"]

[Text] The assurance of continually increasing demands on the capacity for transmitting information and on the available types of telecommunications services may not be economically implemented by a mere expansion of the existing network and technical resources. If one considers the economical utilization of current networks, the economics of their construction, maintenance and operation, then one concludes that it is essential to unify these networks, and especially their operation. This unification is possible only on the principle of a shift from analog signals to the transmission of digital signals. In a digital network, all information-processing (transmission, connection, storage) is realized on the basis of discrete signals created by a sequence of polar or bipolar pulses.

In connection with the digitalization of the telecommunications network, it is necessary to clarify the term "integration." There are two levels to be considered:

--Technical integration (linking the transmission and connecting processes on the single base of temporally discrete signals in the entire telecommunications network. This leads both to the disappearance of the concept of a circuit bounded by virtual interconnection points and to a blurring of the differences between local and intercity networks).

--Service integration (the merger of all independent systems into a single system on the basis of a digital signal).

While feasible technical and economic conditions are also coming about in our country for the first level, integration at the second level is for the time being only prospective.

It appears, then, that the most important qualitative change related to the digitalization of the telecommunications network is done other than the introduction of a single type of signal for all forms of information, with an elementary unit of one bit. This signal will also be useful immediately for

information-processing in digital computers, without regard for whether the original source signal was of digital or analog character.

The advantages of digital transmission include:

- the independence of transmission quality from circuit length;
- the unnoticeable influence of interference;
- large potential for alternative routings;
- the integration of network and services;
- improved adaptability to various transmission media (optical fibers);
- reduced susceptibility to monitoring.

It follows from the above comments that the introduction of digital communication and transmission capabilities, their integration and thereby the creation of conditions for the integration of all telecommunications (and related) services, is not only a technological fad, but a necessity brought about by the development of telecommunications technology, and by the responsibility to provide for the development of services which are today operating in mutually distinct networks. It is clear that it will be necessary to prepare for these tasks in such a way that the future development of local and intercity networks will not exert a braking influence on this objective.

Both Czechoslovakia and the other CEMA countries have been devoting attention to these issues recently. In view of the necessity for solving a huge range of technical problems in conjunction with the attempt to create a unified system of communications and transmission technology on the basis of pulse-code modulation (PCM), several CEMA countries, among them Czechoslovakia, have merged their efforts in the development of a unified system of communications technology resources (not limited, however, exclusively to digital systems) and in the development of a unified system of digital information transmission. These systems are to be developed on the basis of uniform basic specifications formulated by the individual communications administrations of the CEMA member countries.

Czechoslovak industry has joined this cooperative effort in the development and production of certain communication technology components for medium- and large-capacity exchanges to the extent that it will provide for a full range of deliveries of foreign and domestic products for the needs of the Czechoslovak telephone network. A precondition for the rapid implementation of these tasks is the utilization of the base of existing licenses for the production of digital communications systems such as, for instance, the MT 20/25 system of French origin, together with the USSR. The broad cooperation of countries organized in this fashion allows the projection that the production of this system will be initiated toward the end of the Eighth Five-Year Plan.

Czechoslovak telecommunications, within the framework of preparation for the integration of a unified telecommunications network (JTS), has carried out experimental testing of the operation of a representative of the systems under consideration at the Vlasí junction telephone exchange (UTO). This is the E10 system which, because it has been described on numerous occasions, will not be characterized here in any more detail. The objectives of this testing were:

- to determine the conditions of its incorporation into the existing JTS configuration;

- to establish and verify the conditions for the compatibility of this system with the systems already operating in the JTS;

- to evaluate the services which are provided from a technical and an economic viewpoint;

- to utilize system potential for more advanced management principles in operation and maintenance;

- to compare the economic aspects of electronic and electromechanical systems and their influence on investment efficiency in the area of JTS construction;

- to evaluate additional properties of these systems, and the possibilities for utilizing them to establish the further development of communications technology in the CSSR.

It is already possible, after a short period of operation of this experimental network, to provide a positive answer to several of these questions, while certain questions, especially those of an economic nature, are independent of the conclusion of the experiment, and their resolution must be postponed to a later time.

The basic property of the E10 system is the commutation of digital signals in the form of PCM. Through the conversion of a voice analog signal to a PCM signal at the output of a participant block, there arises a four-wire connecting route within the exchange and, to the extent that the exchange is tied into PCM transmission systems, it is possible to create an entire network characterized by four-wire connecting routes. During conversion from a PCM transmission system to an analog transmission system, it is likewise possible to retain the characteristic of five-wire connections.

A system outfitted with program control makes possible much more flexible utilization within the network than the current specialized systems.

From the viewpoint of network implementation, the characteristics of a system organized in this manner permit its utilization at various levels, among them:

- main exchange, city telephone circuits (HU MTO);

- main exchange, metropolitan network;

--central telephone exchanges with the possibility of transfer to the exchanges of other systems;

--central telephone exchanges with satellites, including and managing the operation of the entire exchange;

--intercity telephone exchanges;

--Communications Systems [SS] for metropolitan networks;

--combined exchanges which merge several of the above functions.

On the basis of further developments, this system will be able to be used;

--as a large independent branch exchange;

--as a merged branch exchange, combining a given number of smaller, unaffiliated branch exchanges;

--as a merged public exchange and a branch exchange.

Existing work with this system in the CSSR and an analysis of its properties as a system indicate that it is possible, through the use of this system, further to develop the existing conception of a JTS while improving its qualitative parameters. As the above overview has indicated, such a system may be utilized at almost all network levels under, however, certain economic and systematic conditions, i.e., with greater or lesser economic profitability and with greater or lesser adaptation to the network into which it is incorporated. I mean to emphasize, in other words, that we are not dealing here with an unambiguously universal system, but one which may be utilized under certain conditions.

The system is compatible with all types of exchanges provided that it is supplemented with appropriate types of relay sets. Of course, it is assumed that a direct PCM link will exist between two E10 exchanges. Likewise, PCM systems may be used for transmission to other exchanges, as long as terminal equipment and transmission media exist in the compatible exchange. Nf [low frequency contacts] require the placing of end equipment in the E10, including the appropriate relay sets. Insofar as the cooperating exchanges are linked by an analog system, the outputs from the end equipment in the E10 exchange may be connected with the input of this transmission system in such a way that the keying of the signaling channels is carried out by a so-called performance output from the PCM system according to a program at the E10 exchange. This technique means that an analog transmission system may be controlled without transmission media, as long as the E10 has been programmed to correspond to the type of signaling used by the transmitting media in the cooperating exchange. If no corresponding program has been established in an E10, then E10 outputs must be handled by transmission media corresponding to those in the cooperating system and to the analog equipment systems for which the program exists.

A uniform length for participating numbers is assumed within the framework of an E10 exchange. The system conducts a directional and rate analysis from 3-4 digits of the number of the called party which it has accepted (exclusive of "0" and "00"). Based on the results of this analysis, the exchange directs the call to a bundle of lines in the indicated direction. There may be as many as 400 directions. Various techniques of line and register signaling may be utilized within specific directions.

Program-controlled systems allow the centralized recording of rate data for all directly linked subscribers. A record of message units, obtained on the basis of direction-number analysis, is stored in the memory of the rate data for the calling party. From this storage, it is possible to retrieve at any time information concerning what, where, when and how long a caller spoke, which is important information for claims administration. These systems also permit the centralized recording of rate data for subscribers in subordinate exchanges, as long as the exchanges to which they are linked have the capability for identifying the calling party. This possibility is already being considered in relation to augmenting Czechoslovak PK [Pulse Code] systems with this identification capability.

Existing studies of the introduction of a system into a JTS indicate that it is possible to proceed in two directions. One direction consists of the replacement of individual exchanges by independent exchanges, without the necessity for basic changes in the current configuration of the JTS, while the other direction consists of the flexible utilization of all the properties of programmed systems and the adaptation of the existing JTS structure of these qualitative changes.

It is necessary to say a few words about this second direction. A characteristic feature, for instance, of an E10 system is subscriber blocks for 500 connections, and currently 1,000 connections for an E10B system, linked to a digital group selector stage (1800 by 1800) with the assistance of 230 PCM channels. The subscriber blocks may be directly at the group selector (CSAL), or remote and in range of the PCM system (CSAD--about 40 kilometers). This decentralization makes possible, for instance, at the locations of existing 0 MTOs, the creation of satellite exchanges for 500 (1,000) connections which, from a connection viewpoint, operate as individual subexchanges with 500 connection graduations and without internal operations, and which are controlled from the main exchange of an S MTO. To the extent that population density and the percentage of telephonization are sufficiently high, such utilization is without doubt desirable. Central telephone exchanges in the countryside, however, often do not achieve the requisite telephonization density, and therefore a relatively extensive subscriber network must be counted on. It is, therefore, necessary to take into consideration, given the increased resistance within a telephone subscriber's loop (1,500), that increased damping will occur in the subscriber network (12-13 decibels). This disadvantage, however, is compensated for by low attenuation of the transmission routes. Appropriately constructed concentrators may also be used to conserve subscriber lines.

In view of the fact that PCM transmission range is up to 40 kilometers and, at the same time, the attenuation at the exchange itself is 3 decibels, it is possible to expand the limits of existing junction telephone exchanges in those places where the technically necessary level of telephonization is low enough so that the full capacity of an exchange may be used from the beginning. For a further increase in telephonization, it is then possible, at a later date and in locations with a larger number of subscribers, to build a new group selection stage which, in conjunction with the earlier stage at another location, along PCM channels, will form a single junction telephone exchange when viewed from the outside.

From the above-mentioned capabilities it follows that the existing JTS configuration need not be an obstacle to the introduction of digital systems, but that these systems, on the other hand, can favorably influence the development of this configuration from an economic and technological viewpoint. Thus, for instance, should neighboring junction telephone exchanges be constructed on the basis of this communications technology, it will be possible to realize through these exchanges, in addition to transverse and traffic, overflow intercity traffic routed through a transit exchange. All previously utilized telephone exchange systems in JTS may serve as cooperating or subordinate exchanges with which it is essential to establish line and register signalization according to their requirements.

In metropolitan and urban networks, it is possible gradually to build decades and to link them to the existing network. This is the first path mentioned above. More progressive, however, is the construction in the first place of merged stages, because they can operate bidirectionally and, to the extent that there is more than one of them in a digital system, they permit the mutual overflow and transit of operation at times of disrupted or overloaded lines. So far, however, a serious shortcoming has been the small number of channels in one bundle, because the current situation in the production and development of PCM transmission systems permits the introduction of first-degree PCM systems. Communications cable for metropolitan networks require bundles of from 200 to 1,000 lines, which implies a need for PCM transmission systems of the second and higher degrees.

The introduction of an E10 system at the higher levels of the telephone network is a practical possibility and would be desirable especially given the current construction of transit exchanges and several junction exchanges utilizing PCM transmission systems. Participant connecting blocks (CSAL, CSAD) are not necessary for an independent transit exchange, because only connecting lines are hooked up to the exchange. This increases the economy of the system, especially if the connecting channels are implemented with the aid of PCM transmission. There are here, however, certain restrictions related to lower use levels of the connecting circuits. Current experimental operation has also pointed to the desirability of introducing new services which are provided by a program-controlled system. In addition to the services offered by PK systems, other services are offered, such as the following:

- call rerouting;

- delay until an occupied subscriber becomes available;

- shortened dialing time for certain frequently called numbers;
- operational monitoring (control) of subscriber stations at user request;
- automatic waking services.

The introduction of these services means not only increased quality from the user standpoint, but also from the viewpoint of the operator. These and other services, even though their range has not yet been expressed in terms of numbers, have a quite unambiguous economic significance not only in the actual operation of exchanges, but also for network dimensioning, because they radically reduce useless occupying of communication lines and reduce the number of repeated dialings, which leads directly to a reduction in operational losses.

A basic and fundamental change brought by program-controlled systems is a change in maintenance principles and in operational management in the true sense of the word. While the computational activity of a communications system is controlled by microprocessing units, the operational and maintenance functions are provided by a commercial computer, which is outfitted with units appropriate for communications such as is the case, for instance, with E10 exchanges. This equipment goes by the acronym CTI and serves the operational and maintenance needs not only of the actual exchange but also of the entire network which the exchange ties together. The CTI accepts various types of information from the hooked up exchanges. This information is processed and printed by the CTI. The processed information has two forms:

- information concerning faulty functioning of exchange and transmission systems;
- information for the statistical requirements of an evaluation of operational quality.

This information is used for operational functions and monitoring activity. Such a system for operational and maintenance control is entirely prospective and with the introduction of these systems into the JTS, operational control will also develop gradually throughout the entire JTS.

This ongoing experiment should also be evaluated economically, especially in relation to electromechanical systems and in conjunction with their influence on investment efficiency. This evaluation, however, is not possible with regard to still-unresolved price questions and general prospects, i.e., the time schedule for their introduction on a mass basis. Currently it is necessary to maintain at a general comparison of these advantages:

- the technical integration of communication and transmission resources within JTS;
- service integration within JTS (data transmission, facsimile transmission, TELMAT type services, telegraph services, etc.);

- services provided directly by higher level communications systems;
- newly formulated principles of maintenance and operational management;
- higher, i.e., improved distribution of attenuation within JTS;
- more economical JTS configuration;
- more desirable construction parameters, in the sense of lesser space demands (which directly relates to capital investment) and fewer demands on the construction of new and existing buildings (which relates closely to the renovation not only of individual telephone exchanges, but also of networks).

In conjunction with the introduction of integrated systems into JTS, it is necessary to be aware that this is not only a question of the mere replacement of existing communications systems with others, but a question of a profound process connected with the gradual digitalization of the entire telecommunications network. In its immediate phase, the introduction of digital systems is assumed only to a limited extent, mainly in local and junction telephone networks, on the basis of the utilization of a favorable evaluation of an E10 system. It is a matter of resolving several pressing problems related to the construction of a junction telephone exchange in Prague and the renovation of the Prague Stred ATU [Automatic Telephone Exchange]. The Prague junction telephone exchange has been studied with a view to the utilization of communications technology in a number of variations, each pursuing the objective of a maximum possible reduction in construction work for the erection of new buildings in the O MTO and for building modifications for the actual central exchange. Consideration has likewise been given to difficulties in the connecting circuits. After evaluating the possibilities, which consisted of using a PK system or an MK system, it was decided to construct a junction exchange with an E10 system. While attempting to solve problems of renovation of certain decades of the telephone exchanges in Prague Stred, the Telecommunications Directorate came up against a serious problem, related to obtaining appropriate space for a renovated ATU. There could be no question of constructing a building for a new ATU, and it is not possible to reconstruct old buildings to increase the bearing capacity of their floors for the requirements of PK exchanges. The solution of an E10 system is, then being offered, which would also resolve certain network-related problems. The economics of this proposal are also enhanced by the potential for using a single CTI for more than one exchange in Prague Stred.

On the basis of the alternatives which had been considered, this construction project was included in the Seventh Five-Year Plan, and is now at the stage of commercial contract preparation with the People's Republic of Poland.

9276

CSO: 5500/3022

FIBEROPTIC RESEARCH AND DEVELOPMENT DISCUSSED

Jerusalem THE ISRAEL ECONOMIST in English Feb 82 pp 13-14

[Excerpts] It is called fiberoptics and it uses strands of glass encased in cables to convey messages by pulses of light. Fibronics is a dynamic Israeli company, involved in a technology that may prove to have an impact as great as the telephone line did 100 years ago.

The design of many advanced computers has been limited by existing support equipment--most notably by the speed limitations in sending information over old-fashioned wire cables. Costly compromises were often required at the transmitter end of the operation--a drawback which limited the amount of users as well as speed of data transmission. Fiberoptics is a development which eliminates this drawback.

"The speed of information transfer, which has to date been limited by metal cable characteristics, is no longer so limited. Using fiberoptic technology, we can increase by hundreds of times the current data sending rates," explains Dr. J. Morris Weinberg, Fibronics' President. "Speed means that many more terminals can be connected onto the same cable."

This, in turn, will enable many more users at home or at work to perform interactive operations with computers. Thus, teacher and pupil could communicate; computer shopping and computer banking all become possible.

Fibronics produces equipment and cable for use in fiberoptic communications. This includes transmitters and receivers for communication, a fiberoptic telephone, fibers and cables.

A team at Fibronics has adapted fiberoptics to Israeli conditions, and the Israel Post Office will soon install its first experimental fiberoptic telephone system.

Several large Israeli firms have departments which work with fiberoptics. However, Fibronics Ltd is the first Israeli company solely devoted to optical communications. Fibronics opened at Technion City's Gutwirth Center in 1978. Weinberg had been director of R & D for an electro-optics firm in Massachusetts when he decided to set out in business on his own. He concluded that the future of electro-optics was in the field of fiberoptics. Weinberg found a leading company in the field and set up a subsidiary, which has since split off from the parent company.

... Weinberg left Massachusetts and settled in Israel. He obtained a "know-how" agreement from a leading US fiberoptics company, "whose incentive in manufacturing location was primarily to tie in with an EEC member country. The US firm found that Israel had the best tax benefits, the best start-up advantages, and other economic drawing points. "The decision to start our company in Israel was made for practical reasons. Israel was the best location to set up a science-based industrial company to do business with Western Europe," says Weinberg.

Weinberg proceeded to look for an Israeli partner. Haifa's Elron Ltd agreed to enter into partnership with Fibronics. The next step was finding a place to get started. The answer was found in the Technion--Israel Institute of Technology's Scientific Science-Based Industries Center.

Getting Started

The Scientific Center was intended as a "nest" for fledgling industries. Here they could get their start, get on their feet and, once established, they could seek a permanent home, as Fibronics did recently. "If the Technion hadn't helped, it would have been a hardship getting started," Norma Pasekoff, Marketing Administration points out. "Appropriate facilities in a suitable location take time to establish. The Technion made it possible to get started while they were being built."

Fibronics is a vertically integrated company which manufactures a wide range of fiberoptic equipment, from the fiber and cable itself to transmission systems, receivers and a fiberoptic telephone. "We think of ourselves as specialists in fiberoptic short haul data transmission," says Weinberg, "providing the products necessary to permit our customers to interconnect their computers, process control equipment and closed circuit TV. Our clientele includes factories, office parks, universities, etc., whose connections are not via public telephone lines, but through internal cable."

Fibronics' R&D team is turning the company into a leader in fiber component technology, and a new generation of components is in its final stage of development. "Our philosophy is to provide those additional pieces necessary to permit complex fiberoptic networks to be installed. Therefore, we are emphasizing development of modern optical splitters and couplers to permit users to attach and interconnect many electronic devices to a given fiberoptic cable," says Weinberg.

One of the more exciting new breakthroughs at Fibronics is a total IBM compatible fiberoptic network system. This means that Fibronics now has products that work with IBM's unique computer language. This new system can save the IBM user thousands of dollars in cable costs by replacing the present day bundles of coaxial cable bearing an IBM 3270 controller by one, thin, fiberoptic cable. Now the entire complement of IBM printers and terminals can operate in remote clusters, at nearly maximum data rates, while connected to the host computer by fiberoptics. Early enthusiasm for this product suggests strong sales for the Fibronics system in 1982.

Another area of emphasis at Fibronics is the development of specialized fiberoptic cable. A first push in this area has been the manufacture of a fully military qualified fiberoptic cable. This cable can withstand the rigors of outdoor use under battlefield conditions. Complete testing equipment to insure reliability is being utilized at the Fibronics' Haifa facility.

"In the future, access to libraries, newspapers, magazines, and company reports could reach the average person with the speed of light. Fibronics Ltd has travelled only part way down that path of light," says Weinberg. "Before us lies a communication challenge that will very likely alter our world and affect the quality of life, as did the harnessing of electricity, the invention of the automobile and the airplane."

CSD: 5500/4716

EXPANSION OF SW BROADCASTING DELAYED BY 2 YEARS

Gaborone DAILY NEWS in English 16 Mar 82 p 2

[Text] RADIO Botswana's short-wave broadcasting expansion programme has been set back by two years as a result of supply delays. Parliament was told on Friday

There was an angry reaction from MPs when the Minister of Public Service and Information, Mr Daniel Kwelagobe, reported that delivery of three fifty-kilowatt short-wave transmitters, promised for 1981, had now been put back until late 1983.

Mr Kwelagobe said that the transmitters, costing a million Pula, had been ordered from the German Siemens company in August 1980, and new aerials and a building extension had been commenced accordingly, at a cost of about P650,000. "We have now been told by the manufacturer, Siemens," he said, "that delivery cannot be effected until - at the earliest - late 1983; and even if this does occur, the price must be increased by over 50%." He added that steps were being taken at the highest level, including diplomatic approaches, to improve the situation; however it was virtually certain that the project would be delayed by a year whatever happened.

The Minister was seeking the

sum of P801,000 for the Department of Information & Broadcasting's development budget. Commenting on the delay, Mr H. Jankie, MP for Ghanzi, complained that the reception was very poor at present in the rural areas. The MP for Moshupa, Mr E.S. Masisi, agreed with him, calling for the rapid spread of VHF/FM outside Gaborone.

Mr G.S. Mosinyi, MP for Shoshong, particularly cited the 31 metre band, upon which, he said, "everything comes in." He told the House that the transmitters were needed urgently because the present reception was so poor.

Mr Kwelagobe had earlier said in his presentation that an increase of P161,000 in the total estimated cost of another of the Department's projects reflected a Cabinet decision taken in mid-1981 to expand the "Daily News" from its present four pages to eight, and to increase the print run from 20,000 to 35,000.

He added: "The first step towards this has already been taken, with the combination earlier this month of the "Daily News" and "Dikgang tsa Gompieno" into one dual-

language paper.

The increased print run of the paper will mean that, at last, the field information offices should have an adequate supply of copies for distribution outside Gaborone."

MPs expressed a desire for better Setswana news readers. One member even asserted that only one Setswana news reader was up to the required standard. "The rest are useless," said Mr J. Jankie. The BDP MP for Kweneng East, Mr David Magang, said that because of the failure to improve the service of the Department, Batswana were being "distracted to foreign media." He suggested that spot announcements should be read at peak hours, when most people were at home, and not during working hours. "Announcements are important because there is no other way to reach the remote areas except through the radio," he added.

Other MPs also called for rapid improvements in the service provided by the Department, blaming a high turnover of staff on a lack of promotion prospects, and criticising news and music programmes. BOPA

CSO: 5500/5759

BOTSWANA

BRIEFS

PLANS TO BOOST TV2--Television owners in Botswana are considering the installation of a transposure amplifier at Kgale for beaming 'TV 2' signals from South Africa. The 'TV 2' channel of the South African Broadcasting Corporation Television is beamed in Setswana, the major language of this region. The decision to install the amplifier was reached at a recent meeting of the 'Television Owners' Association' in Gaborone. In an interview with the Botswana Press Agency, the Chairman of the Association, Mr J. Karakis said the Association needed over P7,000 for the project. He explained however that the new machine may not provide clear TV pictures because the signal would be received from Pretoria. The signal for TV 1, which is currently amplified and beamed in Botswana, comes from Lichtenburg which is nearer to Botswana. Mr Karakis also spoke about the general reluctance of TV owners to become members of the association, saying they were not helping the Association. He estimated that there were 1,000 television sets in the country, but the membership of the Association is only 300. The Association was formed in 1978 and members contributed P75 each for the installation of the amplifier at Kgale. Meanwhile, the Gaborone Police are carrying out investigations into what they believe a person or persons broke the TV booster at Kgale recently, causing a temporary cut-off. According to the police, damage was caused to the aerial and some parts of the booster were taken away. No arrest has been made and if any would be made, the charged would be malicious damage to property. BOPA [Text] [Gaborone DAILY NEWS in English 18 Mar 82 p 1]

CSD: 5500/5759

SULULTA EARTH SATELLITE STATION TO BE UPGRADED

Addis Ababa THE ETHIOPIAN HERALD in English 20 Mar 82 p 6

[Excerpt] The nearly two years old Sululta Satellite Earth Station has considerably facilitated Ethiopia's communication links with the rest of the world. The satellite earth station has a perfect circuit reliability and availability compared to the high frequency radio communication system used in the past. The old systems had a number of problems with respect to the quality of the communication and that it was not very reliable from the performance point of view.

The satellite earth station combines the most essential qualities in the communication system and the station at Sululta is of international standard. It has a 99.99 per cent reliability and availability feature as it operates on a semi-automatic system. The incoming calls are received directly without the intervention of an operator while operators are handling all out-going calls.

The earth station is used for the transmission of telephone, telex, telegraph, facsimile as well as photographs and the reception of television programmes. The Sululta earth station had 36 channels at the time of inauguration, which at present has reached 60. This is a marked growth since the number of channels before the introduction of the earth station was only 12. The station was initially

designed and equipped to accommodate 120 channels over a period of five years. As a result of the growth in traffic, it had been decided to raise the number of the existing channels.

The station is equipped only to receive television programmes from overseas. However, the station's transmission capability will be perfected under the sixth development programme of the Ethiopian Telecommunications Authority (ETA), which is to be launched in 1982. During the same plan period, the station's capacity will be raised by another 60 channels bringing the total to 180.

The Sululta earth satellite station is of type 'A' standard because it is open for further expansion. In addition to this, the radio division of ETA has a plan to introduce a single channel per carrier system (SCPC) in order to enable the station to communicate directly with 'B' standard type of earth stations mostly in use in the developing countries. Moreover, the station offers important services with what is known as "leased data service", which for instance, the Ethiopian Airlines is presently using. Furthermore, the station is ready to provide similar services to all interested international organizations wishing to benefit from it.

FOREIGN DOMINANCE OF ELECTRONICS INDUSTRY REPORTED

Johannesburg SUNDAY TIMES-BUSINESS TIMES in English 28 Mar 82 p 9

[Article by Colin Bower: "Foreign Firms Still Dominant"]

[Text]

IN spite of the strenuous efforts that have been made to indigenise the R2 000-million-a-year electronics industry, more than 80% of turnover goes to overseas-owned companies.

This is the conclusion of a confidential report on the industry that Business Times had sight of this week.

Other authorities in the industry believe this estimate to be on the high side, and one spokesman said the percentage would be more appropriate if it were specifically referring to Post Office contract work.

According to the report, the electronics market remains dominated by companies such as Philips, Siemens and Plessey — but TMSA must obviously be added to the list.

Of the locally controlled companies, only Altech "is in the same league" as the principal overseas companies.

"Any move towards disinvestment from South Africa would have a particularly severe effect," the report says, "owing to the dominance of Siemens, Plessey and Philips."

The report rates the electronics industry No 3 in South Africa behind mining and chemicals "in terms of importance".

Local companies other than Altech with major interests in the electronics industry are Barlow Rand, Grinaker — through its Grinel subsidiary — and Morkels and Tedelex, which operate in the consumer sector.

Positive forecasts for growth in the industry are based largely on the R4 000-million Post Office supply contracts, which will run through to the next decade, and the burgeoning TV set industry.

The arrival of the TV2 and TV3 services, and the electrification of greater Soweto programme, helps manufacturers to forecast an increase in sales from 300 000 sets last year to 350 000 this year.

The critical problem area remains the continuing shortage of skilled manpower, especially at the graduate engineer and technician levels.

The industry has sustained an approximate growth rate of 25% over the past five years, and with the "massive scope for further application", the report suggests that the industry is "well placed to maintain a healthy growth rate over the next five years".

The telecommunications sector is dominated by the Post Office suppliers, Siemens, TMSA, Altech through STC, and Plessey.

Principal manufacturers in the industrial sector — that is, measurement and control instrumentation, PABXs, traffic control and related equipment — are Altech, Siemens, Plessey, Phil-

ips and GEC.

Local component manufacture in this sector is growing at 25% a year, says the report.

The consumer sector is dominated by the conservatively estimated R350-million-a-year TV industry, where a wide range of competitors is active.

The computer sector is dominated by IBM, with sales of about R150-million last year, while ICL and Burroughs vie for second spot.

In the power electronics sector, GEC is regarded as the biggest supplier, followed by Hawker Siddeley, Rayrolle Parsons, Siemens, Asea and Hubert Davies.

No mention is made of Powertech, which has sales of R95-million, and probably ranks behind GEC as the biggest locally controlled operation in the sector.

Sales in switchgear, transmission equipment, motors, transformers and related products make up 60% of this sector, with the balance in cables and lighting.

Playing a major role in each of the categories is the components industry.

The only commercial manufacturer of integrated circuits in South Africa is the South African Micro Electronics Systems (SAMES), controlled by the Post Office (51% and Siemens 49%).

SAMES is also the sole supplier of ICs for Post Office telecommunications and other electronic equipment.

Altech is the other principal supplier of components.

Also in the R250-million market are Philips, Plessey, and a host of independent suppliers such as Crest Components, Protromix, Allied Electronics, Suntronika, South Continental Devices and others.

Estimated turnover breakdown

	R-m	%
Telecommunications	500	25
Industrial	450	23
Consumer	400	20
Computers	400	20
Military	250	12
TOTAL	2 000	100

TROOP OF ARMED FORCES TV REPORTED

Johannesburg SUNDAY TIMES in English 21 Mar 82 p 5

[Article by Geoffrey Allen: "Troopies 'TV' in 2 R1-m Muddle"]

[Text]

ARMED Forces TV (Pty), which screens second-channel television to an estimated 80 000 troops, is to be the focus of a judicial probe covering a complex spiderweb of bankrupt companies — one of which owes over R1-million.

What is becoming known as "the great million-rand armed forces TV muddle" stems from a complicated series of company transactions.

Most of them were masterminded by Mr Hymie Segal and his wife Maureen, who sat on the boards of half a dozen companies.

Creditors of a Segal company, TV Entertainment (Pty), maintain that Armed Forces TV (AFTV) is illegally using expensive electronic equipment taken from TV Entertainment.

Now they want to reclaim it saying that the equipment, which can copy 25 video films simultaneously, should be sold to help pay off TV Entertainment's R1-million plus debts.

AFTV claims it went through the correct procedure to obtain the equipment after TV Entertainment was placed in provisional liquidation.

All the bulky equipment was moved from TV Entertainment's premises to AFTV's headquarters near Halfway House.

TV Entertainment traded publicly as Prime Time.

When Armed Forces TV was launched in December, 1980, Mr Hymie Segal, gener-

al manager of Prime Time which was to supply the video films for the service, predicted profits from advertising of R4-million a year.

Adverts

Profits were to come from adverts put into the films by AFTV.

In April, 1981, Prime Time was placed under judicial management, and was put in final liquidation in December.

The liquidator of TV Entertainment, Mr Albert Ruskin, said that he was aware that AFTV had acquired a small amount of equipment from the company, but said that the ownership of the bulk of the very expensive equipment was a matter for "thorough investigation".

TV Entertainment was an umbrella company which installed "second channel" TV in hotels and blocks of flats all over the country through a network of at least six associated companies with common directors.

One of its associate companies, TV Entertainment Cape (Pty) was changed to Superpix (Pty), which first negotiated the Defence Force contract which AFTV subsequently took over.

Charges

Superpix, which was represented by Seychelles mercenary Mr Jan Olof Sydow, is also in liquidation.

In terms of the Company's Act, Superpix operated ille-

gally by conducting business before it had been registered as a company.

According to a Superpix contract document, Mr Sydow was appointed to represent the company on July 28, 1979, yet the company was only registered in Pretoria on February 22, 1980.

Superpix was placed in liquidation owing R3 687 for the purchase of asbestos material intended for use by another company which runs horse stables outside Johannesburg, and with which Mrs Maureen Segal is connected.

Before Superpix could exercise its option on the SADF contract, one of its directors, Mr Alexander McKee (who had also been a director of Prime Time), negotiated a second contract with the SADF in the name of AFTV.

This contract gave the SADF Fund (which provides home comforts to army personnel) payments from advertising revenue on a rising scale over the five year period of the contract.

The SADF were also to supply the blank video films which AFTV used to make copies of the films it screened.

Allegations against Prime Time by its creditors are:

- That it illegally screened video films installed in second channel TV in blocks of flats and hotels because it pirated the films

and did not hold the copyrights.

- It supplied films (in 1981) to Armed Forces TV on the same illegal basis.

Sole director

Mrs Maureen Segal, who was the sole director and shareholder by the time the company was liquidated, has refused to co-operate with the liquidator appointed by the Supreme Court.

To force her to disclose information on how the companies are related and where their physical assets are being held, Mr Ruskin will call her and other interested parties before a judicial inquiry.

So far none of the company's assets — which include video tapes said to be worth R90 000 — have been recovered by the liquidators.

Mr Ruskin said: "Prime Time has no copyright agreements to screen the films as far as I can ascertain, and would therefore have been pirating them."

At his office, Mr McKee said his company had started screening films at all army, navy, and air force bases in 1980.

"Prime Time were doing duplicating (of video films) for me, but we went to court and got permission to take over the equipment."

Neither Ms Segal or his wife could be contacted.

AMDAHL INTERNATIONAL CHALLENGES IBM HOLD ON MARKET

Johannesburg SUNDAY TIMES-BUSINESS TIMES in English 21 Mar 82 p 3

[Article by Andrew McNulty: "New Challenger to IBM's SA Market"]

[Text]

A NEW David aiming to loosen the grip of the IBM Goliath has entered the South African computer market.

Amdahl International Corp, part of a group which has been one of the legendary success stories of the computer industry during the 1970s, has set up shop in Johannesburg.

Since placing its first machine on the market in 1975, the group has grown into a \$500-million operation that claims 10% to 15% of the upper end of the mainframe computer market, a share won almost wholly from IBM.

This has given Amdahl a worldwide installed base of about 700 machines, worth \$1 750-million, contrasting sharply with about 50 companies that have gone out of business trying to compete with IBM.

This, says Terry Pasola, general manager of northern European operations, which includes South Africa, is "incomparably" more than any other IBM plug compatible manufacturer (pcm) has done.

Since its formation in 1970 by former top IBM man Dr Gene Amdahl — designer of the IBM 360 system — the company has established itself as a specialist in innovative, large mainframe computers, producing some of the most powerful machines available.

More compact machines and advantages in price and maintenance costs have helped Amdahl win new business and achieve growth at a rate of about 50% a year during the first five years.

Special techniques in

mainframe design such as Large Scale Integration (LSI), which enables more compact design, and Emitter Coupled Logic (ECL), which enables faster operation, and self-diagnostic systems have all given Amdahl advantages, Mr Pasola says.

John Millin, who is running the South African operation, says that his target for 1982 is to sell four systems at an average cost of R2-million to R3-million. This would give Amdahl total sales of about R6-million for its first year in SA.

"Customers could include Government departments, universities, banks, building societies, mining companies and the motor industry. We have had an enthusiastic reception so far," he says.

Success by Amdahl in the local market will also mean new — albeit indirect — inroads by the Japanese.

Fujitsu, which supplied part of the finance for the launch of Amdahl, holds 31.5% of Amdahl's stock and is the major supplier of Amdahl's unique sub-assemblies.

However, Mr Pasola says of the local operation "As a subsidiary of a company that designs, manufactures, markets and services its own computers, there is a world of difference between us and a company that is merely the local representative of another overseas company."

He adds that the full range of Amdahl computer equipment, including the powerful 5800 system, is now available in South Africa.

BARLOWS PLAN TO ESTABLISH LOCAL COMPUTER INDUSTRY REPORTED

Johannesburg SUNDAY TIMES-BUSINESS TIMES in English 28 Mar 82 p 1

[Article by Andrew McNulty: "Barlows Leaps into R1,200-m Computer Sector"]

[TSA]

BARLOWS has embarked on a major new offensive into South Africa's R1 200-million computer industry.

It aims to establish the first locally based giant in the field.

This is the implication of a restructuring of the group's computer operations this week and the establishment of a new corporate computer operation, BarlowData.

Doug Eyre, managing director of BarlowData, says that acquisitions which could be "completely open-ended in financial investment" and the establishment of local manufacturing operations are among plans for the coming year.

They will be the first SA computer company to enter into local manufacture on a significant scale.

Barlow Rand's new computer operations should achieve annual sales of more than R100-million by 1984/85, Mr Eyre says.

The current year's sales will be well over R40-million, but growth of 80% is expected in 1982 and average annual growth is forecast to exceed 50%.

Current turnovers of the top three overseas computer companies in South Africa — IBM, Burroughs and ICL — range between R100-million and R200-million.

Although one of South Africa's most important and fastest-growing industries, the computer field is one of the few areas where Barlows has until now had relatively limited exposure.

Earlier this month, Mike Rosholt, chairman of Barlow Rand, opened Perseus Park, a R3-million headquarters for the computer operations.

The move followed immediately after completion of a major restructuring and decentralisation of the R5 930-million Barlows, planned to gear the group for growth in the 1980s.

The computer operations will strengthen the muscle of the electronics, motor and

engineering divisions headed by Derek Cooper.

It has been estimated that, together with the computer budget of the Barlow companies, BarlowData will have a turnover of R30-million.

BarlowData — 51% held by Barlows and most of the remainder by company executives — has the role of a corporate umbrella attending to long-ranging planning and strategy.

"We aim to be a group of synergistic, complementary companies with an entrepreneurial philosophy."

"By moving closer to the Barlows corporate identity but retaining autonomy we hope that top people and companies will feel comfortable about joining us," says Mr Eyre.

Five operating companies fall under BarlowData.

Perseus, founded in 1980 by Mr Eyre, has the local agency for the US-giant, Data General, and is a prominent distributor of minicomputer systems.

The new but fast-growing Persetel, local representative of the burgeoning Japanese company, Hitachi, specialises in mainframes.

Barcad specialises in a new field of computer aided design (CAD).

Perasetech specialises in industrial applications of computers and Persefin is a group computer financing company.

"I expect to see a lot of expansion of that in the coming year," Mr Eyre says.

"We will reassess our approach to local electronics products. That must mean local manufacture and assembly requiring investment of multi-millions within the next 12 to 24 months."

"The environment is ripe for that."

He says the emphasis in such a venture would be on peripherals, on computer communication equipment and on adaptation of existing hardware to local needs rather than any attempts to "reinvent the wheel".

"There is a general lack of, and a need for, intelligent terminals with a good communications ability using state-of-the-art technology. We could do that."

Mr Eyre adds that they expect to meet considerable demand from local users who see a strategic need for secu-

rity of supply.

Acquisitions would have to be large, with a strong growth outlook, to be worthwhile, their turnover already running into seven figures.

Plans include building vertically integrated operations, with strong emphasis on software applications and development of expertise in the group.

A major step to come, probably to be achieved by acquisitions, would be a strong entry into the micro-computer field.

"But this field is looking over-traded now and a shake-out is likely during the year. Our entry would probably be in about 12 months."

CSO: 5758

DETAILS ON DOMESTIC COMPUTER INDUSTRY GIVEN

Johannesburg THE STAR in English 24 Mar 82 pp 22, 23

[Article by James Clarke: "SA Computer Industry Has a Lift-off"]

[Text:] South Africa is now producing its own computers. James Clarke looks at the pioneering stages of a new industry which could eventually become the country's biggest employer.

Florida Park shopping centre on the West Rand with its big shady trees stands in the middle of a well-manicured suburb. It is the last place you would expect to see an industrial revolution begin.

There is a shop in this corner — a computer centre — and among its many items are the big grey eyes of mainframes, and a blinking keyboard.

The boss is Alex Payne (66), a highly successful and successful Pretoria-based businessman who runs a STOL (small take-off and landing) aircraft company and is also into furniture, hotels and a few other things. But his obsession is building computers.

What makes him unique is that he runs South Africa's only computer-

manufacturing business. Behind his shop he has an assembly plant and a research and development laboratory. He claims, naturally enough, that his desk-top computers are better than anything South Africa imports.

Amateur

The computers they make are more powerful than microcomputers — many micro are "amateur machines" according to Mr Payne, but less powerful than the huge mainframe machines which are housed in big businesses in air-conditioned halls.

Alex Payne's five-year-old computer business signals the start of a fourth stage in South Africa's industrial evolution. The first was primary industry (agriculture), then came secondary industrial development (manufacturing of goods), then tertiary (com-

merce and finance).

Now a fourth sector cuts across the other three and deeply influences their futures.

It is based on information technology (IT), a term used to describe the marriage between computers, micro-electronics and telecommunications. The three are today as scrambled as an omelet.

The new technology will not only revolutionise the way we live and work it will become a big new employer. IT is already showing signs of explosive growth in South Africa.

● This year computer sales in micro and mini alone should top R350 million.

● The big banks are committed this year to installing R10-million worth of computer-aided street-side automatic tellers which dispense cash, accept

deposits and make inter-account transfer. One bank has ordered 83 South Africa-wide.

● Architects, planners and other businessmen with drawing offices spent more than R10-million last year on computers to aid designing. The year before — nil. This year, possibly R15-million. Designers get instant three-dimensional colour images of their drawings and this can increase their productivity up to four times. That is an instance of how IT can ease the skills crisis.

● Computer-aided manufacturing — the first step towards industrial robots — had no buyers in 1980 but sold more than R10 million in machines last year. This year demand is heavier.

● A Redfordnew butcher uses a computer to tip off his

...automatically or place automatically when he gets in, check out or when their services are over. It is a just one of many small businesses now using microcomputers.

● This year's annual SA Computer Show at Trades in Fine Centre Johannesburg in May has been booked out for months. More than 30 computer firms are exhibiting and 70 more are on the waiting list.

Patient

● The poor office is in the advanced stages of developing a new and computer information service which can be called up on some computers.

Ang Payne's three coders are typical of the new breed of men behind IT. They are young, enthusiastic and very, very patient.

"You have to be patient," said Mr Payne. "Most people appreciate that the computer is about to become part of everyday life in the home and in the office, and that it will be essential in boosting productivity and reducing costs — but they are scared of it. Most are afraid they'll never get the hang of using 'smart machines'."

Desktop

The basics though require less skill than learning to drive a car.

I spoke to the firm's technical director, Keith Irwin, (29) who began his career on mainframes. When microcomputers appeared in 1977 he instantly recognised the writing was on the wall for the big old mainframe computers. Hardware and software for desktop computers.

By slipping a ferrite-coated plastic disc (called a diskette) into a small computer it becomes immediately ready to be used for a specialised function. One package Mr Irwin has developed was for pharmacists — the first on the market. It even prints out the voice message for medical aid and it does the re-ordering and gives an instant stock reading. Slip in another tailor-made diskette and it can do the chemist's end-of-month accounts.

Unique

Mr Irwin has developed programmes to cope with the peculiarities of running furniture businesses (hire purchases and repossession, for instance). "In South Africa, with its unique regulations, we need custom-made packages," said Mr Irwin.

Another package

they researched and developed does wages even to the extent of disgorge the paypackets listing the exact cost.

At the top of the range of these South African computers is one with a built-in RAM (random access memory) — it can store data which can be altered at will which can store 1-million "bits" and that is about the number of characters in five of six novels. It can also take diskettes and these can increase its memory storage to an unlimited extent. You could file Encyclopaedia Britannica in a small drawer.

Main frame

Another advantage of the South African-made computers (only 20 percent of the parts are imported and that will soon be reduced) is that they can be connected to a mainframe computer out, can at the same time, be operated independently of it. Alternatively several terminals with keyboards and screens in various offices can be attached to one desk-top computer — thus it can be used like a mainframe.

The computers have their own locally made voltage

regulators which again are made specifically for our peculiar local conditions where voltages fluctuate — a rare phenomenon overseas.

The costs are, says Mr Payne, competitive with overseas models.

Ken Goldenhans, sales director of the West Rand firm, compared the quality of his firm's product with a popular make of imported machine. The printed circuits in the local machine fitted more firmly, the modules and gold-plated plugs were more easily replaceable and the sockets dustproof.

The local product produces information much faster than the ordinary run of microcomputers.

Next off the drawing board in the shop on the corner is an intelligent cash register for trades which require total control of all outlets.

Mr Payne's firm has a dictionary for a word processor — again tailor-made for South African needs. The dictionary will spot spelling errors. Wrongly spelt words will flash on and off and the correct word will appear at the bottom of the screen.

In the past year the firm trained 15 staff and now business is brisk enough for it to use its own aircraft.

BRIEFS

LOWAPL: SYSTEMS COMPANY--A link-up with an Israeli systems company has provided a local company with the chance to offer an advanced information switching package to the local market. Core Computer Systems has concluded an agreement with Manof Management Systems, of Tel Aviv, to market its IBM Series 1 mini-computer based package. This package offers message switching, text processing and manipulation, automatic access to and from the public telex network, and it allows users to take advantage of the data processing applications traditionally associated with the IBM Series 1 mini-computer. It offers daily control over a company's internal and external communications and it provides a full financial and statistical analysis of the whole system. This package enables companies to use inexpensive terminals as totally integrated mail points/work stations with direct access to or from the telex, other departments, other company branches and, if required, to the main frame computer. With 64 Mb of storage available as standard, many categories of files may be created, stored and indexed, and access to these files may be restricted to certain users or terminals. Archiving of any message or document is possible by adding a magnetic tape sub-system, to which information may be "dumped" automatically, either in a time frame or by identified category. [Text] [Johannesburg SUNDAY TIMES-BUSINESS TIMES in English 28 Mar 82 p 6]

ORR 1300/5758

BRITISH FIRM'S TAKEOVER OF STBC AUTHORIZED

Deal Signed

Mbabane THE TIMES OF SWAZILAND in English 1 Apr 82 p 1

[Text]

THE government yesterday signed an agreement authorising its immediate takeover of Swaziland Television Broadcasting Corporation.

The station has been bought by government for E2.5 million from the British based Electronics Rental Group.

In terms of the agreement, the Electronic Rental Group will continue to help government in the management of the station and Visionhire for some time.

The station will be run as a parastatal body, according to the Deputy Prime Minister, Senator Ben Ntshandze, who said a Bill would be brought before Parliament in this regard.

Speaking at the signing ceremony, Senator Ntshandze

pointed out that initially, the station would continue without any local programmes. But, he said, proper equipment would soon be bought to enable it to expand and cater for local needs.

"We hope to continue to get the co-operation of the Electronic Rental Group, with whom we had happy negotiations," he said.

Popular

A representative of the Electronic Group, Mr. F.C. Hodgkinson said it had been the objective of the company to conclude an agreement whereby the television service "which proved so popular in Swaziland, would not be disrupted in any way by a change

in control."

He conveyed the chief executive officer of the Company, Mr. David Hurley's regards and expression of appreciation for the manner in which negotiations were carried out.

"On behalf of the Electronic Rental Group which, in terms of this agreement will continue to assist government for some time in the management of STBC and Visionhire, I wish the government of Swaziland every success in the continued operation of the television service," Mr. Hodgkinson.

The station will be operated entirely as a parastatal body and will not be linked to the Swaziland Broadcasting Service, Senator Ntshandze said.

'Financial Failure'

Mbabane THE TIMES OF SWAZILAND in English 2 Apr 82 p 1

[Text]

THE government takeover of Swaziland Television Broadcasting Corporation was necessary "because the corporation was a financial failure."

This was spelled out yesterday by government officials involved in the takeover process.

One official told The

Times: "The corporation came in us because it was suffering such heavy losses and it was decided that it should be renewed."

"In fact the E2.2 million paid for the station will not cover all the losses suffered."

The takeover agreement was signed this week by the Deputy Prime Minister, Senator Ben Ntshandze and

Mr. F.C. Hodgkinson representing Electronic Rental Group.

The station will now be run by a parastatal body.

The takeover plan was originally disclosed in February when it was revealed in supplementary estimates that money had been set aside for the purchase.

Last March STBC approached the government and

threatened to close down unless the company was met halfway in the financial costs.

It was revealed that the company was running at a heavy loss.

The government asked the company to continue operating at least until after the King's Diamond Jubilee.

Urgent negotiations were resumed soon after the celebrations when it was finally decided that the government should bail the company out.

The decision to rescue the television service was made in view of the fact that the public was already used to having television.

It is understood the main reason for the large losses is the fact that there are too few television sets to attract the necessary level of advertising.

The television service was inaugurated by King Sobhuza II in 1978.

CSO: 5500/5756

PARLIAMENT SUPPORTS TELECOMMUNICATIONS EXPANSION PROGRAM

Mbabane THE TIMES OF SWAZILAND in English 29 Mar 82 p 1

[Article by Mashumi Twala]

[Text]

THE Department of Posts and Telecommunications has received Parliament's full support for their third phase telecommunications expansion programme.

The House of Assembly unanimously passed, through all stages, two Bills authorising the Minister of Finance to borrow a total of E11,300,000 from the Export Corporation of Development in Canada for two proposed major projects.

The first of these is a telephone and telex services improvement project to expand the Mbabane, Manzini and Lobamba automatic exchanges.

The second and most significant project is an earth satellite station, which will provide a modern and efficient telecommunications link with the rest of the world.

The station, estimated to cost E3.5 million, will not only bring the country's telecommunications services abreast with international services, but will also help to cut the present reliance on South Africa, said the Deputy Minister of Finance, Mr. John Masson.

Presenting the Bill, Mr. Masson said this was the

second part of the department's third development phase.

He told Parliament that the station would connect Swaziland to the rest of the world through a satellite link-up.

The station, he said, would enable the country to receive live television transmissions of major events in all parts of Europe and the United States.

He explained that presently, Swaziland is connected to overseas countries by an underground system controlled in Cape Town. "The disadvantages of this process is that a large part of our revenue share from outside calls goes to South Africa and, in addition, there are many security problems," he said.

Mr. Masson pointed out that once the station was in operation, Swaziland's revenue share would be greatly increased and would pay back the loan within the seven-year condition of repayment set down by the Canadian corporation. He said: "It will easily become a self-financing project once the debt has been paid back."

Mr. Masson went on to say that in addition to the loan, the Canadian corpo-

ration was offering a E800,000 free grant which would enable the department to train a large number of their technical staff and improve the general administration capability of the station. "Members will agree that this is a valuable addition to the country's technical resources," he said.

He also pointed out that other technicians would receive on-the-job training before being sent to further their skills in the field. "In addition, a Canadian engineer will be provided for the first two years of the station's operations," said Mr. Masson.

Mr. Msunduzeni Dlamini, wanted to know if the station would be connected with only the Commonwealth countries or the entire world, because, he said, if it would be linked to the whole world there were dangers that some pirates would listen in to the country's secrets.

Mr. Masson replied: "Our connections initially will be with Britain and America, where most of the telephones market is. Calls to other countries will be relayed through these two states."

INAUGURATION OF EDUCATIONAL 'RADIO 4' SET FOR NOVEMBER

Salisbury THE HERALD in English 25 Mar 82 pp 1, 5

[Text]

RADIO 4 will concentrate entirely on education and should be operational by October or November, says the Minister of Information, Posts and Telecommunications, Dr Nathan Shamuyarira.

Dr Shamuyarira was speaking yesterday when he opened the review session of the joint Nordic-UNESCO broadcasting manpower development project in Salisbury.

He said the new channel would enable the Ministry of Education to expand its direct schools education programme.

Other ministries, such as Health and Labour and Social Services, would be able to buy time on the air to put out regular programmes.

The station would also be used to extend functional literacy and to impart skills to the rural population.

It was hoped to run supplementary courses for people already engaged in various activities. Women's groups, youth groups or workers' committees could benefit from such courses, said the minister.

Radio was vital in telling the population about the Government's socialist objectives and to bring about a commitment to them but there was still much to be done in this sphere.

The minister said radio was an important instrument for counteracting "information aggression from South Africa and

some foreign correspondents".

"This aggression has, since our independence, concentrated on the possible breakdown of law and order in this country.

"It has been focussed on two main issues: firstly the view that there will be a mass exodus of Europeans; secondly, that there will be a civil war between the Ndebele and the Mashona."

Calling what had happened in Zimbabwe since independence a "near miracle", Dr Shamuyarira said that the story of reconstruction and rehabilitation had to be told, and was being told, every day by Zimbabwe's media.

Turning to the purpose of the project — to train manpower for broadcasting — he said this country had three sources of manpower after independence.

These were a small hard core of guerillas in both parties who had been in broadcasting, refugees interested or involved in the media all over the world, and the personnel who had served under the previous regime.

"Having started with this three-cornered base it was not enough to sustain mass media institutions, and we started the Institute of Mass Communication."

This institute had been formed and staffed in a great hurry, Dr Shamuyarira said, and now "our institute is too small and too young to cater for all our needs".

It had been formed to prevent a breakdown in the flow of news, and when that danger was averted the organisation would take up two other issues.

These were presenting a positive image of Zimbabwe through the media, and projecting the socialist perspective of the Government.

Dr Shamuyarira said that although the Government did not want to switch to colour television too quickly, it was being forced to by the suppliers of equipment.

The re-equipment of the country's radio system to expand its coverage from 90 to 100 percent of the country would be completed by the end of 1984.

The Government was also committed to the Southern Africa Development Co-ordination Conference.

There was a need to build up an effective telecommunications network between the SADCC countries, he said, noting that not enough was being done to exchange news and pictures between the various SADCC news agencies.

The three-day conference is being attended by representatives from UNESCO, Zambia, Tanzania, Swaziland, Lesotho, Kenya, Botswana, Denmark, Sweden, Norway and Finland.

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